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ABSTRACT

This paper discusses the role of family variables in the development of schizophrenia. Other theories regarding the etiology of schizophrenia are summarized to show the complexity of the problem. Both biological and psychosocial factors are discussed. The review of current developments is organized around three family characteristics that have emerged as distinguishing families with schizophrenic members from families without schizophrenic members: (1) expressed emotion; (2) affective style; and (3) communication deviance. The construct validity of these characteristics is discussed. The problem of whether these family characteristics are results of the illness or contributing factors in the development of schizophrenia is analyzed according to recent longitudinal and treatment studies. In spite of the improvement of prediction of schizophrenic outcome by combining the measures or by dividing the expressed emotion measure into subtypes, current family studies are still unable to conclusively answer the etiological question regarding schizophrenia. It is recommended that a multivariate conceptualization of the etiology of schizophrenia be used, which incorporates biological, psychosocial, and family variables. (Author/NB)

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# FAMILY CHARACTERISTICS RELEVANT TO THE DEVELOPMENT AND TREATMENT OF SCHIZOPHRENIA

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Doctoral Research Paper
for the Degree of Doctor of Psychology

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BIOLA UNIVERSITY

FREDERICK CHU

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# FAMILY CHARACTERISTICS RELEVANT TO THE DEVELOPMENT AND TREATMENT OF SCHIZOPHRENIA

BY

FREDERICK CHU

A doctoral research paper submitted to
Rosemead School of Psychology
in partial fulfillment of the requirements
for the degree of
Doctor of Psychology

La Mirada, California

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FAMILY CHARACTERISTICS RELEVANT

TO THE DEVELOPMENT AND

TREATMENT OF SCHIZOPHRENIA

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Abstract

This paper discusses the role of family variables in the development of schizophrenia. Other theories regarding to the etiology of the disorder will also be summarized to show the complexity of the problem.

Family research projects during the last decade have found three family characteristics--Expressed Emotion, Affective Style, and Communication Deviance--to be related to the onset and relapse of schizophrenia. Methodologies of these studies will be analysed to determine whether those family characteristics are resultant from or contributory to the development of the illness.

In spite of the improvement of prediction of schizophrenic outcome by combining the measures or dividing Expressed Emotion measure into subtypes, current family studies are still unable to answer the etiological question regarding to schizophrenia conclusively. Hence, it is best to use a multivariate conceptualization of the etiology of schizophrenia, which incorporates the biological, psychosocial, and family variables.

# Family Characteristics Relevant to the Development and Treatment of Schizophrenia

The role that family factors play in both the development and treatment of schizophrenia is a topic that stirs up many disagreements among mental health professionals and generates conflicts between families, treatment facilities, and clinicians. Terkelsen (1983) suggested that "the hypothesis that family interaction contributes heavily to the etiology of schizophrenia . . . is not only incorrect but even harmful to families, and to the relationship between families and clinicians" (p. 191).

Many family members feel guilt about the mental illness of their children because some mental health professionals, either overtly or covertly, blame them for the illness. They therefore refuse to participate in the treatment program, and are liable to reject recommendations from mental health clinicians. The debate between Hunter (1985) and Glick and Spencer (1985) demonstrates varied assumptions even among clinicians who do include families in their intervention strategies. According to Glick and Spencer (1985), "1 [The medical model therapies] do not assume that the etiology of the hospitalized patient's illness

lies in the family; they assume that schizophrenia and other psychotic illness may in large part be of biological origin and that a family's behavior or communication pattern in most cases is not 'disturbed' beyond what might be expected in any family that has to cope with catastrophic illness in one of its members. . . . 2. The primary intervention used by the medical model therapies is psychoeducational; they do not usually try to make changes in the family system" (p. 350). Hunter (1985), however, argues that the etiology of schizophrenia is due to complex interactions between many factors: biological, interpersonal, societal, cultural and environmental. He states that medical model theorists emphasize helping the family to cope with the disease, whereas the interactional model theorists attempt to reduce patient stress levels by changing the family environment.

The search for etiological variables for schizophrenia is more than an intellectual exercise, but may help to resolve the conflicts and misunderstanding between families and professionals. Many treatment programs for psychotic patients perceive families as playing a major role in causing the patients' symptoms. A huge gap between patients' families and mental health professionals is therefore created. In a survey of

parents with psychotic offspring, Hatfield (1978) found that nearly half of her subjects complained that mental health professionals did not respect their opinions or understand their problems. In another study, Holden and Lewine (1982) found that 91% of the families with psychotic relatives expressed negative feelings about working with mental health professionals and 74% of the families stated that they were dissatisfied with the professionals.

Families and mental health facilities are the two major institutions having close contact with severely disturbed patients. It is neither easy nor rewarding to work with this population. Hence, the two groups tend to project their anger and frustration toward each other, furthering the conflicts between them and thereby producing detrimental effects on the patients. Instead of blaming the family, an impartial search for the role of family characteristics associated with schizophrenia may provide clinicians with a more objective understanding of how those family variables are related to schizophrenia. They may therefore prevent the onset or relapse of schizophrenia by attempting to alter those variables.

Currently, there are two major approaches in investigating the etiology of schizophrenia. Some theorists stress the biological roots of the disorder, while others stress family influences on the

pathology. It is generally accepted that both factors have some role in determining psychopathologies. As long as the theorists of the two different approaches do not insist that their respective views are "the only way" to understand the etiology of schizophrenia, there is room for a balanced approach to the understanding and the treatment of the disease.

The purpose of this paper is to clarify the role that family variables play in relation to the development and treatment of schiozophrenia. A growing number of empirical studies on family variables related to schizophrenia during the last decade have prompted a revival of emphasis on family factors in relation to schizophrenic etiology, a subject previously dominated by genetic and biochemical theories. This revival is probably due to promising investigations on more specific family variables, such as (a) expressed emotion, (b) affective style, and (c) communication deviance. Another possible reason for this revival is the urgency of searching for an efficient intervention approach in additional to the drug treatment of schizophrenia. Recent investigations have shown us the effectiveness of whole family treatment strategies aimed at providing some relief for parents who are concerned with the long term care of their mentally ill children,

as well as reducing relapse rates among the patients themselves.

The development of the disorder should be conceptualized in terms of interactions between genetic, neurological, and psychosocial factors. Therefore, investigators (Group for the Advancement of Psychiatry, 1984) recommended a cross-domain interdisciplinary approach in order to better delineate the complex interactions between these different contributory factors. Studies of family correlates of schizophrenia constitute only one of several approaches to understanding the etiology of schizophrenia.

About 30 years ago, many pioneers first attempted to use family concepts to understand this psychosis. However, their theories were not supported by later empirical studies because their ideas and terminologies were difficult to operationalize, and their theories did not consider the interactions between family and bio-genetic factors. In addition, early studies of family variables and schizophrenia had inconsistent findings and poor methodologies. Hence, there was a decline of family studies of schizophrenia until 1975, with an increase since then, due to more promising results (Doane, 1978; Goldstein & Doane, 1982; and Liem, 1980).

The first part of this paper will emphasize the overall background by reviewing the complex causality of

schizophrenia, including a discussion of both biological and psychosocial factors. It is beyond the scope of this paper to review all the studies supporting a multidimensional model, but it will include a discussion of interactional models of schizophrenia--the "vulnerability model" (Zubin, 1981, 1985) and the "three phases model" (Ciompi, 1984)--which incorporate both biological and psychosocial influences on schizophrenia. The author will then summarize the pioneer studies relating family variables to schizophrenia, examine the major reviews, and then proceed to discuss some of the more current developments resulting from family oriented studies of schizophrenia.

The review of current developments will be organized around three family characteristics that have emerged as distinguishing families with schizophrenic members from families without schizophrenic offsprings: (a) expressed emotion, (b) affective style, and (c) communication deviance. The construct validity of these characteristics will also be discussed. Next, the problem of whether those family characteristics are results of the illness or one of many contributing factors in the development of schizophrenia will be analysed according to recent longitudinal and treatment studies.

Finally, I will review newer findings from current research projects aimed at defining the role of family factors revelant to the onset, course, and treatment of schizophrenia. After identifying specific family variables that were found to be associated with the course of schizophrenia, the results can be utilized to suggest suitable intervention strategies.

## Complex Causality of Schizophrenia

In order to have a better perspective of the role family variables play in the investigation of schizophrenia, we need to survey other factors involved in the study of the disorder. The etiology of the disorder is best conceptualized in terms of interactions between bio-genetic and socio-environmental factors. These two factors and related theories will now be briefly examined.

## Bio-Genetic Factors

### Brain Theories

In recent years, tremendous advances have been made in the study of the brains of schizophrenic patients due to the use of sophisticated technological instruments such as the Computerized Tomography (CT scan) and the Positran Emission Tomography (PET scan). Research scientists now have a better understanding of the structure and function of the brain. Many brain researchers have attempted to attribute mental disorders

to brain abnormalities. Weinberger and his colleagues, for example, have published numerous articles claiming that ventricular enlargement is associated with the onset of schizophrenia (e.g., Weinberger & Wyatt, 1982). However, not all schizophrenics are found to have ventricular enlargement. The hypothesis is that schizophrenia can be caused by either environmentally induced brain abnormalities or by a genetic predisposition that is not associated with structural brain abnormality. Research discoveries show that lateral ventricular size abnormality in the brain occurs more frequently in schizophrenic patients without schizophrenic relatives, than in patients who have one or more schizophrenic relatives. This might indicate that brain abnormality could be the cause of schizophrenia for patients who are not influenced by the genetic predisposition evidenced by having no schizophrenic relatives. Moreover, schizophrenic probands in pairs of discordant identical twins have larger ventricles than their non-schizophrenic siblings (Reveley, 1975). The implication is that schizophrenia either runs in families (genetic) or may be influenced by environmentally caused brain structure abnormalities. These implied factors lead to the speculation that there are two kinds of schizophrenic disorders, one being related to genetic

make-up, the other related to brain atrophy. The relationship between the genetic factor and brain abnormality is still controversial in the literature. The results of this research indicate that either the organic component or the genetic factor might affect some intermediate variables (e.g., biochemical imbalance), resulting in distortions of the patient's cognitive processing.

Another important area of psychosis oriented brain research concerns the possible role that hemisphere imbalance might play in schizophrenia. Anatomical evidence for this theory can be found in from three sources: (a) reversed asymmetry on CT scans (Luchins, Weinberger, & Wyatt, 1979), (b) left hemisphere atrophy on CT scans (Golden et al., 1981), and (c) damage to the left temporal lobe (Gruzelier, 1973). However, the above findings were challenged by recent scientists (Andreasen, Dennert, Olsen, & Damasio, 1982; Schneider, 1983; Toone, Cooke, & Lacher, 1981). The sensory and neurological systems are the points of contact between an individual's inner world and external reality. The way we gain information from the world and the ways in which we organize that information into viable knowledge could well be influenced by abnormalities of the brain.

Biochemical Theories

Most biochemical theories are closely related to the

brain theories. The former focus on the anatomical structure of the central nervous system, while the latter are concerned with the functional components (neurotransmitters) of the central nervous system. Currently, there are two main biochemical causation theories relating to schizophrenia: the transmethylation theory and the dopamine theory (Shapiro, 1981). The transmethylation theory suggests that the breakdown of the normal transmethylation process might be the basis of schizophrenia. The abnormal methylation of norepinephrine produces a mescaline-like substance, a hallucigen called 3, 4-dimethosyphenyle thylamine (DMPEA). Investigators found significantly higher levels of DMPEA in the urine of schizophrenics than in the urine of normal people (Friedhoff, Park, Schweitaer, Burdock & Armour, 1977). However, the significance of this finding is still unclear, and the concept requires further examination.

The dopamine theory suggests that an excess of dopaminergic activity is the basis of schizophrenia (Crow, 1978). Excess dopaminergic activity could be the result of either too much dopamine being released at synapses or to hypersensitivity of dopamine receptors. There is good evidence to support the view that dopaminergic pathways are involved in schizophrenia. Additional

support for this theory is the effectiveness of phenothiazine medication on schizophrenics. The action of all phenothizines is to block the dopamine receptors in the nervous system. However, the direct causal link between dopamine and schizophrenic behaviors cannot be assessed solely on the effectiveness of phenothiazine medication. Moreover, although there is some evidence supporting the view that dopaminergic pathways are involved in schizophrenia, this does not necessarily mean that the primary biochemical defect responsible for the development of these symptoms is to be found in brain dopaminergic systems (Engel & Carlson, 1977). The disruption of the dopamine system may be secondary to some other abnormalities or the effect of extreme stress on the body.

Genetic Theories

The more prominent theories on the etiology of of schizophrenia are those dealing with genetic disposition. Gottesman and Shields (1982) estimated that the risk to a person of developing schizophrenia is 6% with one schizophrenic parent, 10% with one schizophrenic sibling, 20-40% with two schizophrenic parents, and 46-65% with one schizophrenic monozygotic twin sibling. Moreoever, adoptive studies show that monozygotic twins who were raised apart by normal adopted parents have the same concordance rates for developing the disorder as if they

were raised together by their natural parents. There are two theories attempting to explain the role of the genetic factors in relation to schizophrenia. The inheritance theory suggests that people with a certain genotype (one single gene or combination of genes) will develop schizophrenia as an inherited disease. In contrast, the diathesis-stress theory points out that what is inherited is a diathesis (central nervous system deficit) for schizophrenia rather than the disease itself. Diathesis refers to the biochemical predisposition toward the illness which must be presence in order for the illness to manifest itself. However, the diathesis alone is not enough. It must be activated by a stressor. Thus, a person with schizophrenic diathesis may have no symptoms of the illness under an ideal set of circumstances. Mednick (1978) proposed the hypothesis of an inherited neural integrative deficit peculiar to a certain genotype. The neural integrative deficit could be described by the positive symptoms of schizophrenia (Andreasen, 1982; & Crow, 1980), such as delusions, hallucinations, and florid thought disorder (derailment, flight of ideas, illogicality, etc). However, these patients become schizophrenic and develop negative symptoms such as affective flattening, attention impairment, alogia (poverty of speech), avolition-apathy

(impoverishment of motivation) and anhedonia-asocialty (inability to feel intimate) through social learning.

The precise role of genetic factors in schizophrenia is still not clear. However, it is my belief that these factors operate as premorbid preconditioners for the development of the disorder. In their study of children at high risk for schizophrenia, Mednick (1978) and his colleagues suggested that simple hereditary factors might work through intermediate variables, such as neuronal over-excitability, which could have manifold consequences, and that the person with this kind of information processing deficit is more prone to the development of schizophrenia. The genetic studies of schizophrenia are convincing; however, we need to keep in mind that nearly half of the identical twins of schizophrenic probands who share the same genetic endowment do not become schizophrenics. Hence, it is not the genes alone which make a person schizophrenic. Environmental influences are also significant in transforming what is a genetic potential or neurological vulnerability into a manifest schizophrenic disorder. Kinney and Jacobsen (1978) demonstrated that environmental factors, including family environmental factors, appeared to have more of an effect in the development of schizophrenia among adopted children with low genetic risk (normal biological relatives) than they

did for those with high genetic risk (schizophrenia in biological relatives). Hence, environmental or psychosocial factors often play an important role in the development of schizophrenia.

## Socio-Environmental Factors

In this section, I will briefly review theories that emphasize environmental factors influencing the etiology of schizophrenia.

### Psychodynamic Theories

Most psychodynamic explanations of schizophrenia postulate some difficulty occurring in early mother-child interaction, especially during the infant's first two years of development. Theorists have suggested that the capabilities of infants in relating to the outside world are limited and disorganized. Hence, the mother has to play the role of stimulus barrier to prevent the infant from overstimulation from either internal uncomfortable impulses or external stimulation (Frosch, 1983).
With proper caring by the mother, the child will be able to develop capabilities to defend against tolerable threatening internal and external stimulation and to regulate stimulus perceptions. However, if the mother fails to act as a stimulus barrier, the uncomfortable impulses and overstimulation can overwhelm the infant which will interfere with the normal development of

perceptual discrimination and more mature defense mechanisms. When under stress, the person with untamed instinctual demands and an inability to tolerate frustration will resort to primitive defense mechanisms, such as withdrawal, reflecting inadequate reality perceptions and self-object boundaries. Schizophrenia develops when a person is fixated on primitive mechanisms to ward off disorganized overstimulation from either the external or internal environment, instead of acquiring more mature mechanisms to adapt to the external environment and to organize internal impulses. Freida Fromm-Reichmann, in her early psychoanalytic approach to the understanding of schizophrenia, introduced the term "schizophrenogenic mother," which could be defined as a dominant, overprotective, but basically rejecting mother. Hence the mother is giving the child two contradictory messages: verbally accepting but emotionally rejecting. The idea that a "schizophrenogenic mother" is an important factor in the etiology of schizophrenia is being rejected by many empirical researchers (Falloon, 1984; Liem, 1980; & Parker, 1982).

Family Systems Theories

Instead of focusing on developmental issues of a child in relationship to a mother, family system theories emphasize the whole family as a social system

with properties of its own. These properties include rules, roles, a power structure, various forms of communication, and problem solving procedures; together, these properties represent the identity of the family. Research on schizophrenia by pioneers such as Lidz, Bower, Bateson, and Wynne and Singer has helped to put the focus on the family system as a major factor in the etiology of schizophrenia. Mental illness is herein viewed as the result of interpersonal struggles instead of intrapsychic conflicts. This research has also generated further empirical studies on the interaction patterns of families with schizophrenic children. Their theories will be reviewed in the section on "Pioneer Theorists."

## Interaction between Biological and Psychosocial Factors

Organic, biochemical and genetic studies of schizophrenia are not necessarily antagonistic to the idea that the environment also plays an important role in the development of the disorder. The concept of "neural plasticity" provides a means of incorporating both biological and environmental influences into one theory relative to the etiology of schizophrenia. Haracz (1985) defined "neural plasticity" as "the capacity of the nervous system to exhibit structural and functional adaptations to impinging stimuli" (p. 192). In keeping with this, current researchers are studying the

relationship between environmental factors and the structural and functional development of the neurological system. Singer, Wynne and Toohey (1978) suggested that familial communication patterns are etiologically related to structural alterations in the brain depicted on the C.T. scans of some schizophrenic patients. For example, Brady (1981) and Scheflen (1981) demonstrated that early developmental stress could leave a lasting impression on the central nervous system and thereby predispose the person to future psychopathology. These studies, examining the effects of environmental factors on the structural and functional developmental patterns of the neurological system, have been extensively reviewed by Haracz (1985).

The Vulnerability Model

In addition to inherited biological vulnerability in the neurological system, the environmental stress could also leave an impression on the neurological system, thereby intensifying the vulnerability of the organism to schizophrenia. Vulnerability to schizophrenia can be defined as an individual's stress threshold, beyond which stressful events might produce decompensation, which is manifested in the form of schizophrenic symptoms. Hence, investigators argued that it is not the disorder of schizophrenia itself that is inherited, but rather, a biological vulnerability to

the disorder (Ciompi, 1984; Falloon, 1984; Wynne, 1978, & Zubin, 1981). "The genetic components of vulnerability to schizophrenia are inevitably shaped from conception onward throughout development as the result of transactions of the individual with the psychosocial and physical environment . . . constitutional and experiential influences recombine in each developmental phase to create new biological and behavioral potentialities which then help determine the next phase" (Wynne, 1978, p. 704). The vulnerability model of Zubin (1981) is a supermodel that attempts to incorporate the biologically based genetic, neurophysiological and neuroanatomical models with the environmentally based early developmental and family interactional models. Zubin (1984) challenged chronicity as a natural part of the disorder, and suggested that schizophrenia basically occurs only when the vulnerable person is under exogenous or endogenous stress. Zubin has also postulated that patients will return to their premorbid level of functioning after the cessation of the episode, and further indicates that relapse or rehospitalization, instead of being regarded as an exacerbation of an ongoing illness, should be viewed as the onset of a new episode resultant from low tolerance to both cognitive and emotional stress.

The Three Phase Model

A three phase development of schizophrenia is described by Ciompi (1984) using the concept of the vulnerability model. The first of these is the premorbid phase, characterized by a cognitive deficiency in processing complex information, which leads to low tolerance for cognitive and emotional stress due to the combination of biological and early developmental influences. The biological influences might be either genetic or organic, whereas the early developmental influences are related to early mother-infant interaction. The psychodynamic explanation of schizophrenia could fit into this early phase of Ciompi's model. The cognitive apparatus and affective elements of an infant are organized according to early pleasure-displeasure experiences (in relation to a significant person--usually the mother), which are connected to certain sensory and cognitive configurations. In a study of synchrony in mother-infant interaction, Penman, Meares, Baker and Milgrom-Friedman (1983) suggested that the infant's capacity to attend, social responsiveness, and motor activities were associated with the mother's capacity for "screening out" redundant stimuli (i.e., mothers who habituate more rapidly to repeated meaningless stimuli, such habituation being measured by skin resistance changes during a series of auditory

stimuli). This finding is consistent with the vulnerability model of schizophrenia where patients are characterized as having cognitive deficiencies in "screening out" irrelevant information.

Ciompi's second phase is the onset of a psychotic episode due to stressful life events. Studies on family characteristics that are predictive of the onset of schizophrenia and related disorders are available (Doane, 1981; Norton, 1982). A discussion of those articles will be found in the section on "The Role of Familiy Factors in the Onset, Course, & Treatment of Schizophrenia."

The third phase of the Ciompi model is the chronic phase, wherein the patient has developed a life style pattern which is influenced more by psychosocial than by biological factors. This concept emphasizes the importance of environmental factors in the development of schizophrenia. Studies related to the prognosis and course of schizophrenia will also be discussed in the section on "The Role of Family Factors in the Onset, Course, & Treatment of Schizophrenia." The emphasis of the present paper is on the second and third phases of schizophrenic development according to Ciompi's model.

## Family Correlates of Schizophrenia

As previously indicated, family factors play an important role in the development of schizophrenia. This

section will discuss the early theorists who attempted to explain the disorder in terms of family dynamics. Their work had generated a substantial number of empirical studies. It is beyond the scope of this paper to review all the articles available concerning the families of schizophrenics. Readers are referred to reviews by Jacob (1975), Goldstein and Rodnick (1975), Doane (1978), Liem (1980), Wynne (1981), Doane (1982), and Hooley (1985). The author will summarize the pioneer studies, examine major reviews, and then proceed to discuss more current developments of studies on family/schizophrenia interrelationships.

## Pioneer Theorists

Since Harry Stack Sullivan (1927) attempted to link schizophrenic symptoms with family interactional patterns, there have been a growing number of theoretical and empirical publications on the family characteristics of chronic psychotic patients, especially schizophrenics. New theories have emerged, which adopt the family perspective in attempting to understand the development of this kind of psychopathology. The pioneers of this new approach include: 1) Lidz's (1957, 1958) psychoanalytic theories, 2) Bowen's (1966) systems approach, 3) Bateson, Jackson, Haley, and Weakland's (1956) communication theories emphasizing family homeostasis, and 4) Wynne and Singer's (1963) studies on

communication deviance. Their theories will be briefly summarized in the following section.

Theodore Lidz

Lidz extended psychoanalytic concepts to include the family. According to Lidz, schizophrenia is the result of a family's deprivation of the essentials for healthy personality development and identity formation, due to dysfunctional parental characteristics. Firstly, in the "skewed family," one parent (usually the mother) is emotionally disturbed. She wants her child to fulfill all of her dreams, and has high expectations for him or her, but is concurrently overprotective and infantilizing. The other parent (usually the father) is usually very passive and denies any familial problems thus implying to the child that the home situation is normal. The child in this family (usually the son) is deprived of emotional nurturance, and confused by the contradictory messages of the mother and the denials of the father. Secondly, in families with "marital schism," the parents are in constant conflicts, and the children are caught in the middle thus becoming scapegoats. In such a family, the parents are continually devaluing each other, while competing for affection and support from the children at the same time. Hence the children are deprived of a strong, worthy role model with which to

identify with, and at times they even have to find ways to stop the fights between their parents. Lidz considered thought disorders to be the crucial aspect of schizophrenia and the irrationality of the schizophrenic to be the result of 1) emotional deprivation, 2) lack of suitable role models to identify with, 3) contradictory messages, 4) denial of obvious interpretations of reality, and 5) lack of boundaries between parents and children. In summary, Lidz focused on the chaotic role structure, disturbed parental characteristics and dysfunctional communication patterns of families with schizophrenic children.

Murray Bowen

Bowen, like Lidz, based his theory on distorted role relationships between family members occurring as a result of an "emotional divorce" of the parents. He talked about these kinds of marital relationships as oscillating between periods of enmeshment and disengagement, eventually resulting in an emotional distance between the parents to avoid conflict. The parents attempt to maintain family equilibrium by keeping the child both needy and helpless, in order to feel more adequate themselves. However, he also proposed that schizophrenia is a process that takes three to four generations to develop. Unlike Lidz, Bowen shifted our attention to the interpersonal dynamics of the family,

instead of focusing on the characteristics of each individual.

Bateson, Haley, Weakland and Jackson

Instead of focusing on family role structure, the Palo Alto Group emphasized communication patterns in families. They proposed that parents of schizophrenic offsprings frequently communicate "double-bind" messages to their children. According to their concepts, "a double-bind" situation is one in which a person receives contradictory messages from the same individual; he or she is called upon to make some response, but is doomed to failure whatever response he or she chooses" (Goldenberg & Goldenberg, 1980, p. 86). A child can avoid the confusing situation by preventing the parents from knowing his or her response. Eventually, the child is unable to discriminate meanings and to make correct interpretations of reality.

Wynne and Singer

Unlike the previous pioneers, Wynne and Singer are still very active in current research relating family variables to schizophrenia. They are open-minded theorists who are willing to modify their concepts according to empirical evidence. Their work can be divided into two major periods: (a) the early period (1950-1960)--theories about pseudomutuality and the rubber

fence, and (b) the late period--transactional thought disorder theory.

The early period (1950-1960). According to Wynne's earlier theoretical formulations, families have disruptive interpersonal relationships related to the development of schizophrenia. "Rubber fence" describes a family boundary that is unstable, yet so flexible that it stretches to include whatever it considers complementary to its structure or contracts to exclude whatever it considers alien. "Pseudomutuality" is a relationship among family members that gives the appearance of being open and with mutual understanding, but in fact is not (Goldenberg & Goldenberg, 1980, p. 254). Both concepts were thought to be characteristics of families in which schizophrenia developed.

The late period (1963-present). In 1963, Wynne cooperated with Margaret Singer in an effort to link the deviant communication styles of parents with the thinking disorders of children. Communication deviance focuses on the form or style of the transactions, rather than their content. Cognitive and thinking disorders of the individual are the counterparts of communication disorders within an interpersonal relationship. In a family with a schizophrenic member, disturbance of communication transaction is at the process level. There are two identified communication

patterns that might disrupt the cognitive process of the listeners. One is an amorphous style in which communications are vaque, indefinite, and loose. The other is a fragmented pattern in which communications are easily disrupted, are poorly integrated, and lack closure. An index of Communication Deviance was later developed by Wynne & Singer (1966) and updated by Singer (1973) for the use of assessing communication deviations when subjects were responding to certain tasks including the Rorschach, Thematic Objects Sorting, and Twenty Questions Tasks. Communication Deviance is still a widely used measure in the study of the development of schizophrenia. This concept will be further explored in the section on "The role of family factors in the development of schizophrenia."

## Previous Reviews of Family Studies of Schizophrenia

The role of a theory is to provide us with a set of assumptions, and organizational framework, and a set of rules for manipulating the details of the theories. It helps us to understand, explain and predict a certain phenomenon in the world. The pioneers mentioned above provided us with theories concerning the role of family interactional processes in the development of schizophrenia. As scientists, we need to validate their

theories by evaluating the empirical studies that test hypotheses derived from those theories. The theories of the pioneers have generated an increasing number of empirical studies during the past three decades. Several reviews of relevant empirical literature were published which summarized and analysed the results of the findings.

The history of family research can be separated into the period before 1975 and the period since that year. Before 1975, there was a decline in family studies about schizophrenia due to an inconsistent association of family variables with schizophrenia. Studies of the early period have been extensively reviewed by Jacob (1975) and Goldstein and Rodnick (1975).

However, there has been a revival of empirical research during the past twelve years. Other reviews (Doane, 1982; Hooley, 1985; Liem, 1980; Wynne, 1981) were published that included more current empirical studies utilizing more sophisticated methodologies. I will examine the reviews from the two different periods, highlighting the development and advancement of family research.

Reviews of Studies Before 1975

In reviewing the literature published before 1975, Jacob (1975) included family studies of the following four constructs: conflict, dominance, affect, and

communication clarity. He concluded that the results of the studies were inconsistent with one another, and stated that, "family interaction studies . . . have not yet isolated family patterns that reliably differentiate disturbed from normal groups" (Jacob, 1975, p. 56).

Unlike Jacob, Goldstein and Rodnick (1978) concluded in their review of family studies that despite the lack of consistent findings, further research utilizing family correlates could be meritorious. They stated, "the evidence does not permit a clear statement on the role of family factors in the development of schizophrenia. There are sufficient lines of positive, indirect evidence, however, to argue that research directed at this hypothesis, using multiple approaches, is promising and worthy of continued effort and support" (p. 60).

In 1978, there was a debate between Doane and Jacob concerning the interpretations of findings from studies conducted before 1975. Doane (1978) presented an alternative way to organize the different measures of family interaction research:

I. Conflict and Dominance studies
   1. 'Pure-Process' Measures.
   2. Family structure (e.g., coalitions, conflicts, flexibility).
   3. Family Harmony.

4. Family Efficiency and Effectiveness.

II. Communication studies

1. Communication Deviance.

2. Acknowledgement, Clarity, and Conflicting Messages.

3. The Corrective Parent. (p. 359)

According to the above organization, Doane indicated that empirical differences were noted between normal and disturbed families in terms of the following measures: 1. coalition--mother/child alliance appeared less frequently in normal families than disturbed families; 2. flexibility vs. rigidity--greater flexibility in normal families than in disturbed families (e.g., balanced rate of frequency of speech among members, evenness of distribution of who follows whom, reduced predictability of speakers in sequence, higher rates of balanced triadic interaction than dyadic, higher frequencies of speech disruption instead of following a rigid set of sequences, and less rigid distribution of roles in solving a joint task); and 3. communication deviance--lower rates of a disorganized communication style in normal families in responding to a projective task (Rorschach or Thematic Apperception Test).

Doane suggested that Jacob's (1975) failure to find consistent patterns of results in his review was due to

his organization, which focused on the characteristics of individual family members and compared studies using very different operational definitions for a certain construct (Doane, 1978).

Jacob and Grounds (1978), however, responded by criticizing Doane's organizational method, finding her selections as arbitrary, and her use of terms as both vague and contradictory. They also challenged some of the studies reviewed by Doane as methodologically unsophisticated. Doane responded by distinguishing her model which stresses the dynamics of the family as a functional unit from Jacob's linear model which focuses on individual's interactional styles. Doane concluded that there are indications of observable differences between disturbed and normal families, but she agreed that the studies at that time had not yet discovered the etiological role of family characteristics in relation to schizophrenia. Doane disagreed with Jacob and Grounds on the organizational methods of research used, because of the variety of measurement techniques employed to assess the constructs. However, they did agree with each other that the results of the studies were more consistent in terms of the communication deviance construct. For example, Jacob (1975) stated that, "In overview, the available data assessing communication

clarity and accuracy generally suggest that schizophrenic families communicate with less clarity and accuracy than do normal families" (p. 55).

Reviews of Studies After 1975

In the midst of the disagreement among reviewers, Liem (1980), in her detailed special report published by Schizophrenia Bulletin, attempted to shed more light on the issue of family correlates of schizophrenia by including studies published after 1975. Similar to Doane's two categories, Liem organized her review of studies under two major headings: (a) deviant role relationships, and (b) disordered communication processes.

After analysing the results and methodologies of the research, she concluded that, "By and large, the research on role relationships has not gone beyond demonstrating that correlations exist between these family variables and the occurrence of schizophrenia in an offspring. By contrast, recent research in disordered communication has begun to employ methodologies appropriate to testing the direction of the relationship between these family interaction patterns and schizophrenia" (Liem, 1980, p. 82).

Liem suggested that following the decline of "piecemeal" family interation studies from 1968 to 1978, the new

emerging approach would require the systematic, long-term commitment of serious family researchers who were willing to spend many years in implementing longitudinal studies and the development of more complex designs incorporating factors outside the domain of family interaction in order to establish control for alternative explanations of the results. Many recent research projects have improved their designs to meet Jacob's methodological criteria, such as: 1) matching of demographic variables between experimental and control families; 2) using procedures for blind coding of data; 3) attaining high interrater reliabilities; and 4) using control families with treatment experiences comparable to those of the schizophrenic sample.

More research programs during the past decade have adopted longitudinal designs to identify family interactional characteristics before the child at risk has become psychotic. These studies have focused on non-psychotic adolescents at high risk of developing schizophrenia. These adolescents were then reassessed when they entered the risk period for adult schizophrenia (Doane et al., 1981; Norton, 1982). The purpose of these studies was to attempt to show the direction of influence in the sequence of family characteristics and the onset of schizophrenia. They

also provided evidence that contradicted the argument that disturbed family interaction patterns are the results of the psychotic symptoms of the patients.

However, such longitudinal studies were unable to demonstrate conclusively that those family characteristics cause the development of schizophrenia. Hence, instead of arguing that schizophrenia is caused by disruptive family relationships, investigators are beginning to acknowledge the complicated interactions of environmental and biological factors in the development of schizophrenia. The reviewers of more recent literature (Doane and Goldstein, 1982; Hooley, 1985; & Wynne, 1981) are shifting their attention to family factors related to the onset, course, and treatment of schizophrenia. In contrast to pre-1975 studies, using different measurement techniques for assessing family variables, three measures have been identified as being useful in predicting the onset, prognosis, and relapse of schizophrenia, namely (a) communication deviance, (b) expressed emotion, and (c) affective style. Moreover, the results of the studies using these three measurement techniques have been found to be consistent. The following section will provide a description of the three measures.

## Methodological Issues

### Measures

Two new types of studies of families and schizophrenia have been emerging in current literature. One approach emphasizes cognitive aspects of the transaction patterns between members of a schizophrenic family, while the other approach studies the emotional components of the interaction of parents or spouses of the schizophrenics.

Cognitive aspects. A number of studies (Lien, 1980; Singer, Wynne, & Toohey, 1978) suggested that many families, even in the absence of their schizophrenic members, tend to communicate in ways that are more fragmented or amorphous than do families without ill members. Their conversational style bears a resemblance to the schizophrenic's patterns of thinking and speech, but to a much less obvious degree.

Wynne and Singer (1973) suggested that the thinking disorder of schizophrenics is the counterpart of communication disorders within an interpersonal relationship. They have developed the Communication Deviance Coding System to measure distorted communication patterns evinced by the parents while working on a projective task (Rorschach or Thematic Apperception Test). The form or style of the person's speech is

emphasized, rather than content. The coding system consisted of 41 different types of deviances which can be grouped into the following 5 problem areas:

> (a) Commitment Problems--The impact of the items in this section is to cause a listener to wonder about a speaker, 'Does he really mean what he is saying?'; (b) Referent Problems--When referent problems occur, the listener cannot be sure he is sharing the proper referent point; (c) Language Anomalies--Here the speaker may use words peculiarly and place them in odd order, play with their sounds, invert words; (d) Contradictory Arbitrary Sequences--Here, the speaker contradicts himself or violates logic in a variety of ways; and (e) Disruption--Here are several types of occurrences that have a distracting, disrupting effect upon the listener (Doane et al., 1982, p. 215).

Emotional components. The emotional components or affective tone of the family environment has been measured by Doane's (1981) Affective Style scoring, and by Vaughn and Leff's (1976) Expressed Emotion measures. Affective Style was measured by coding observations of the parents in their attempts to resolve family problems with their children. These problems were previously

identified by each family member as important, in order to maximize the probability of obtaining an affectively charged sample of interaction that would be similar to spontaneous discussion. The coding was done by two blind raters. The following is a description of the negative codes in the scoring system: (a) criticism--personal criticism, and benign criticism; (b) guilt induction; and (c) intrusiveness--critical intrusiveness and neutral intrusiveness. The negative codes were found to be more common in the families with schizophrenic offspring, whereas supportive statements were equally common in schizophrenic and normal families.

Affective Style was measured by observation of direct interaction between family members. In contrast, Expressed Emotion measures (Leff, 1976) were obtained by scoring the interviews of one of the patient's parents using either the Camberwell Family Interviews or the UCLA Parent Interviews. The procedure of the interviews included the parents' talking about the patient without the patient being there. There are five different rating scales used to measure expressed emotion in both interviews: (a) critical comments, (b) hostility, (c) emotional overinvolvement, (d) warmth, and (e) positive remarks. Of the five scales, critical comments, hostility and emotional overinvolvement have proved the

most relevant in current schizophrenia research. Hence, only these three scales have been used in recent studies. Parents scoring high on those scales were considered as high-expressed emotion (high-EE) parents, whereas, parents scoring low on the three scales were considered as low-expressed emotion (low-EE) parents.

Construct Validity Studies

After identifying the three measures of families relating to the onset and relapse of schizophrenia, one might ask, "what exactly do those measure reflect?" This section will focus on the validity issue by summarizing research on the construct validity of the measures, emphasizing Expressed Emotion.

There was a substantial amount of research attempting to validate the measures of expressed emotion. One approach to test the construct validity of the measures is to employ external validation criteria. Recently, Valone (1983) and Miklowitz (1984) tested some behavioral correlates of the Expressed Emotion concept by using the behavioral Affective Style measures as points of reference. High Expressed Emotion parents exhibited more negatively charged emotional verbal behavior in direct interactions with their schizophrenic offspring than did low Expressed Emotion parents. In addition, parents scoring high on the critical subscale

of Expressed Emotion made more critical comments when interacting with their children whereas parents scoring high on the overinvolved subscale of Expressed Emotion used more intrusive and invasive statements.

Miklowitz (1986) investigated the relationship between Expressed Emotion and Communication Deviance. His results indicated that when high Expressed Emotion parents were divided into the two different subgroups--parents scoring high on the critical scale and parents scoring high on the overinvolved scale, the latter exhibited the highest levels of communication deviance.

Still further studies, rather than focusing on behavioral characteristics, investigated the physiological arousal of patients and family members in relation to different levels of Expressed Emotion. In an early study, Venables and Wing (1962) used skin conductance measures as an index to demonstrate that chronic schizophrenics were generally more physiologically aroused than acute patients or normal people. Ohman (1981) reviewed the related literature and concluded that electrodermal activity was related to vulnerability to schizophrenic episodes. Hence, other investigators carried out research projects attempting to validate the Expressed Emotion concept by using the measurement of skin conductance frequencies. Tarrier,

Vaughn, Lader & Leff (1979) obtained skin conductance measures from remitted schizophrenics in their homes, both when left alone and in the presence of the key relatives. When the target relative was not present in the room, patients with both low Expressed Emotion and high Expressed Emotion parents displayed a high degree of arousal. However, when the low Expressed Emotion parents entered the room, the patients quickly habituated, and their rate of spontaneous fluctuation in skin condutance soon approached normal levels. In contrast, patients with high Expressed Emotion parents showed no habituation when their parents entered the room. In another study, Valone, Goldstein, and Norton (1984) examined the psychophysiological reactivity of both parents and their disturbed adolescent children during direct family confrontations. The results of Valone et al. suggested that interactions between high Expressed Emotion parents and their children are more emotionally arousing for both parents and children than the communication between low Expressed Emotion relatives and their offspring. The Expressed Emotion measures are clearly related to emotional climate in the families.

Control of Extraneous Variables

Numerous studies reported the correlations between family characteristics and the occurrence of schizophrenia

in offspring. However, there are other confounding variables that might influence interpretations of the results of those studies. Therefore, all the studies reviewed by this author in the section on "The Role of Family Factors in the Onset, Course, and Treatment of Schizophrenia" listed demographic characteristics of the subject families, such as socioeconomic status, parental IQ, index child's IQ, sex of patient's prior hospitalization. The studies all indicated that there were no significant differences between groups according to the above demographic characteristics. The use of blind raters was a common practice in current research, and the interrater reliabilities in most cases were above .80. In addition, two variables which might be confounded with family variables, stressful life events and neuroleptic dosages, were also controlled (Doane et al., 1985; Falloon et al., 1985; and Leff, Kuipers, Berdowitz, & Sturgeon, 1985).

Longitudinal Studies

The majority of current longitudinal studies are still correlational investigation of associations between variables that are not manipulated directly. Nevertheless, longitudinal studies provide information that strongly suggests the direction of influence in the relationship between family characteristics and

schizophrenia. These studies suggested the existence of deviant family interactional patterns prior to the development of schizophrenia, and that such family patterns were not the results of familial adaptation to the symptoms of the illness.

Longitudinal Treatment Studies

In these studies, researchers attempt to change family characteristics measured by Expressed Emotions and Affective Style in order to determine whether such interventions might reduce patient relapse rates.

> "In order to demonstrate convincingly the direction of the causal relationship, the hypothesized independent variable, (in this case EE [Expressed Emotion]) must be externally manipulated, and its resulting effect on the dependent variable (PSE [Present State Examination]-assessed relapse rate) closely monitored. Only when it is shown that relapse rates can be modified by changing relatives' EE [Expressed Emotion] can the direction of causality be considered to be established beyond reasonable doubt" (Hooley, 1985, p. 131).

In their longitudinal treatment study, Leff, Kuiper, Bordowitz, Eberlein-Vries & Sturgeon (1982) attempted to determine whether modifying relevant family interaction

patterns could reduce the subsequent relapse rates of patients identified as schizophrenia. The two objectives of intervention in the study were either to reduce contact between relatives and patient to less than 35 hours per week or to lower the Expressed Emotion levels of relatives. The results indicated that there had been a highly significant reduction in criticism in the experimental group over the nine month period of social intervention. Six of twelve experimental families changed from high to low criticism, while three others indicated some decrease. Reduction of contact was also achieved in six families, and three of those families overlapped with families who reduced their criticism levels. As a result, nine out of twelve experimental families met one or both objectives. During the nine months of follow-up, relapse occured in seven patients, six of them in the control group, which began with twelve patients. In contrast, none of the patients in the nine families that had achieved one or both objectives had a relapse. In a two year follow-up study, findings showed that in those experimental families where relatives' Expressed Emotion and/or face-to-face contact was significantly lowered, the relapse rate was 14%, compared to 78% for control patients (Leff, Kuipers Berkowitz, & Sturgeon, 1985).

Another way to validate deviant family interactions as an etiological factor in schizophrenia is to initiate preventative treatment for high risk adolescents or children. If preventative intervention reduces deviant family interactions (Expressed Emotion, Communication Deviance, and Affective Style) in the experimental families, thus leading to a lower rate of onset of schizophrenia compared to control families, there might be stronger evidence that family variables are valid etiological factors. However, the state of the art of family studies at the present time does not allow us to make such a statement conclusively.

## The Role of Family Factors in the Onset, Course, and Treatment of Schizophrenia

Recent research projects (Doane, Goldberg, & Rodnick, 1981; Doane, Jones, Fisher, Ritzler, Singer, & Wynne, 1982; & Norton, 1982) provided evidence that family characteristics measured during the offspring's adolescent years were associated with the subsequent presence of schizophrenia once the adolescent entered young adulthood. These long term projects indicated that families of high risk adolescents who subsequently developed schizophrenia spectrum disorders in early adulthood can be differentiated from families of high risk adolescents who did not become schizophrenic on the

basis of family characteristics measured by Communication Deviance and Affective Style (Doane et al., 1981) and by Expressed Emotion (Norton, 1982). Offspring of parents with high levels of communication deviance and negative affective style (Doane, 1981) or high levels of expressed emotion (Norton, 1982) were more likely to develop schizophrenia spectrum disorder by the time of the 5-year follow-up. Doane et al. (1981) discovered a better way to predict the onset of schizophrenia by combining the affective style and communication deviance measures. Another method of improving prediction of schizophrenic outcome was to combine the measures of both parental behaviors in different settings (Doane et al., 1981). According to the above investigators, there were three types of parents: (a) Consistently Benign--parents who have a benign Affective Style both when alone with the child, as well as when the spouse participates in the interaction, (b) Inconsistent--parents whose Affective Style is benign in one setting but negative in another, and (c) Consistently Negative--parents whose Affective Style is negative in both contexts. The results indicated that when both parents were Consistently Benign, none of the offspring developed schizophrenic disorders (0 of 19 cases). Even when only one parent was Consistently Benign, a schizophrenic outcome was

significantly less likely (2 out of 13) than when both were inconsistent parents (6 out of 9 cases). When there was one Consistently Negative parent while the other was Inconsistent, 6 out of 8 families had schizophrenic offspring. When both parents were Consistently Negative, the outcome was always poor (3 cases).

In their attempt to identify family characteristics of children 7 to 10 years of age who might develop schizophrenia in adult life, Doane et al. (1932) have given early evidence that mothers who exhibited high levels of communication deviance tended to have children who were judged by teachers, parents and peers as low in functioning and less than competent in multiple settings. In contrast, children rated as high functioning had mothers who did not display high levels of communication deviance.

The Expressed Emotion measure was also used in longitudinal studies designed to predict the relapse rates of patients after discharge. Criticism of and overinvolvement with a patient by a key relative proved to be a good predictor of symptomatic relapse in the nine to twenty-four months following discharge from the hospital (Leff & Vaughn, 1981; Vaughn et al., 1984). Relapse was defined as either a change in state from non-schizophrenic to schizophrenic or a marked

exacerbation of symptoms. In a recent study by Doane et al. (1985), their Affective Style measure was also found to be a good predictor of relapse. Table 1 summarizes the studies of different levels of Expressed Emotion of parents in relation to the relapse percentage of patients 9 to 24 months after discharge.

Table 1

Comparison of Relapse Percentage of Patients from High EE and Low EE Families[a]

| Studies | Relapse Percentage | |
|---|---|---|
| | High EE | Low EE |
| Brown et al. (1972) | 58% | 16% |
| Vaughn & Leff (1976) | 50% | 12% |
| Leff & Vaughn (1981) | | |
| (9 months after discharge) | 59% | 0% |
| (2 years follow-up) | 62% | 20% |
| Vaughn et al. (1984) | | |
| (All patients) | 56% | 17% |
| (Patients live at home) | 60% | 9% |
| Hooley, Orley & Teasdale, (1985) | 59% | 0% |

[a] EE=Expressed Emotion

As seen in Table 1, the end results of the different studies consistently pointed to an association between levels of Expressed Emotion and relapse rates. Also, in each of these studies, factors such as clinical condition, medications, degree of behavioral disturbance, extent of work impairment and stressful life events were statistically controlled.

Patients who have recurrent relapses are considered to have a poor prognosis. Hence, high Expressed Emotion parents are associated with poor patient prognosis. Poor premorbid psychosocial history and higher level of residual symptomatology are indicative of poor prognosis for a patient. Therefore, another manner in which prognosis may be studied is the investigation of premorbid psychosocial history and residual symptomatology levels. Miklowitz et al. (1983) studied the correlation between different levels of Expressed Emotion in parents, and the premorbid psychosocial history and symptomatic characteristics of patients. Their results indicated that high Expressed Emotion patients were indiscriminable on measures of social adjustment prior to hospitalization and symptomatology during hospitalization and at the time of discharge. However, when the high Expressed Emotion group was divided into subtypes, patients from emotionally overinvolved

families were characterized by a poorer premorbid adjustment and greater residual symptomatology at discharge than were patients from critical families and patients from the low Expressed Emotion group. The study also suggested that patients from emotionally overinvolved families had poorer premorbid social adjustment and symptomatology prior to hospitalization. The results raised the question of whether the poor prognosis derived from the overinvolvement of the parents or whether the overprotection was the parents' accommodation to their children's problems during their teen years. Another issue raised by the study was that overinvolved families tended to push for the discharge of their children prematurely, which might account for the poor relapse rates of the patients in the high Expressed Emotion group. Future studies should distinguish the relapse rates of the two high Expressed Emotion subgroups (overinvolved families and critical families).

Recent research strategies have attempted to measure the dynamics of family interactional patterns in different situational contexts. Therefore, it is important to measure the ways in which different individuals play different roles in different situations. Hence recent studies included measures of family variables in

dyadic (parent with child) and triadic (mother, father, and child) settings (Doane, et al., 1981; Valone, et al., 1983). In studying family interactions in these two different contextual settings, Doane et al. (1981) discovered that adolescents with at least one parent who was consistently negative in Affective Style in both dyadic and triadic interactions developed schizophrenia spectrum disorders, whereas adolescents with at least one parent who was consistently benign usually had healthier outcomes. Hence, the consistently benign spouse functioned as a corrective parent, providing a more stable affective environment for the child, thereby diminishing the harmful effects of the inconsistent or consistently negative spouse. This hypothesis is also supported by other studies that indicated that the physiological arousal of the child could be lowered when a low Expressed Emotion parent entered the room (Tarrier et al., 1979; Valone et al., 1984).

There is another interesting finding in the Doane et al. (1981) study concerning "inconsistent parents." For the "soft" spectrum cases--probable borderlines, schizoid personality, and severe character disorders--the inconsistent parents were negative in their dyadic interaction, but adopted a more constructive affective tone in the triadic discussion. In contrast, the parents

of the "hard" spectrum cases--definite borderlines, probable schizophrenics, and definite schizophrenics--were initially benign when interacting with their children in the dyadic setting, but demonstrated negativism when they joined their spouses in the triadic setting. Hence family interactional patterns could be changed according to the situations.

Recent research (Doane et al., 1981) has also combined different variables, such as Communication Deviance and Affective Style to attempt to improve the prediction of the onset of schizophrenia, or to divide high Expressed Emotion measures into two subtypes: emotionally overinvolved families and critical families. Miklowitz and Goldstein (1983) found that patients from emotionally overinvolved families were characterized by poorer premorbid adjustment and greater residual symptomatology at discharge than patients from critical and low Expressed Emotion families. The combination and subdivision of the measures might help us to have a better understanding of these family factors in relation to the development of schizophrenia.

Future Research Directions

Current family researchers are still unable to answer questions of etiology regarding schizophrenia conclusively. It is not enough to demonstrate that

deviant family interaction precedes the onset of the disorder in a child. It must also be shown that family variables and patient pathologies are not the result of a third variable, such as genetic factors. The disorder needs to be conceptualized in terms of interactions between biological and psychosocial variables. Future investigators of this phenomenon will need to apply an interdisciplinary approach, incorporating those variables in their designs that they anticipate will be associated with the measures of family characteristics and the occurrence of schizophrenia. This will help them to isolate family factors from other related variables. In short, genetical and other biological variables need to be controlled in future studies of schizophrenia in families.

Conclusion

The present paper has reviewed the three important measures used in the assessment of family characteristics relating to the onset and relapse of schizophrenia (Communication Deviance, Affective Style, and Expressed Emotion). The consturct validity of these measures has also been discussed. Longitudinal studies have found that these family characteristics as measured prior to the development of schizophrenia predict the subsequent onset of the illness. Moreover, better predictions of

schizophrenic outcome (onset, or relapse) might be achieved by either combining these measures or by subdividing them by types. Treatment studies attempting to change deviant family characteristics in order to improve the prognoses for schizophrenic offspring are still in a preliminary stage. The main objective of studying the roles of family characteristics relevant to schizophrenia is to implement better preventative techniques, treatment modalities, and discharge strategies which will, hopefully, improve the well-being of both the patients and their families.

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